

Cell & Molecular Biology

**THE UNIVERSITY OF RHODE ISLAND**

Student: \_\_\_\_\_

Microbiology Option

Student ID: \_\_\_\_\_

EL\_CMBI\_BS

Advisor: \_\_\_\_\_

120 Earned Credits Total

**ABOUT Cell & Molecular Biology - Microbiology Option:**

Microbiology is the study of microscopic organisms including bacteria, viruses, archaea, fungi, and protists. These are the most successful organisms on the planet and colonize all environments where liquid water exists. Activities of microorganisms drive the biogeochemistry of the earth. Microbes also affect our health and well being from birth in a number of ways including activating and training our immune system and causing or preventing disease. Students choosing to specialize in microbiology within the Cell and Molecular Biology major will become knowledgeable in all aspects of microbiology including microbial physiology, molecular biology and genetics, pathogenics, microbial ecology, immunology, and virology.

**Step 1: REVIEW YOUR PROGRAM REQUIREMENTS**

<b>Cell &amp; Molecular Biology (CMB) - General</b>					<b>37-38 Credits</b>
<b>Concentration Courses</b>					<b>(25 Credits)</b>
Course Name	Course #	Semester	Credits	Grade	
Integrative Microbiology	*CMB 211		4		
Introductory Biochemistry	CMB 311		3		
Immunology and Serology	CMB 333	Fall _____	3		
General Genetics	CMB (BIO) 352		4		
Advanced Microbiology Lecture I	CMB 413	Fall _____	3		
Advanced Microbiology Laboratory I	CMB 415	Fall _____	2		
Advanced Microbiology Lecture II	CMB 414	Spring _____	3		
Advanced Microbiology Laboratory II	CMB 416	Spring _____	2		
Seminar in Cell and Molecular Biology	CMB 495	Fall _____	1		
<b>Professional Electives</b>					<b>(12-13 Credits)</b>
<b>Select one course from the following: CMB 412, 432, 435, 450, 576</b>					<b>(3-4 credits)</b>
Course Name	Course #	Semester	Credits	Grade	
<b>Select an additional 9 credits from any Any 300 level or higher CMB course</b>					<b>(9 Credits)</b>
Course Name	Course #	Semester	Credits	Grade	

Minimum 2.0 cumulative GPA required in major and overall for graduation.

Major GPA = \_\_\_\_\_

Overall GPA = \_\_\_\_\_

\*Course fulfills general education and a major requirement

**Step 1: REVIEW YOUR PROGRAM REQUIREMENTS CONTINUED:**

<b>Introduction Requirement (1 credit)</b>			
Course	Semester	Credits	Grade
URI 101		1	

<b>BIOLOGY (8 credits)</b>			
Course	Semester	Credits	Grade
*BIO 101		3	
*BIO 103		1	
*BIO 102		3	
*BIO 104		1	

<b>CHEMISTRY Requirement: (16-18 credits)</b>			
Course	Semester	Credits	Grade
*CHM 101		3	
CHM 102		1	

**OR**

CHM 191		5	
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**AND**

Course	Semester	Credits	Grade
CHM 112		3	
CHM 114		1	

**OR**

CHM 192		5	
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**AND**

Course	Semester	Credits	Grade
CHM 227		3	
CHM 228		3	
CHM 226		2	

<b>FREE ELECTIVES</b>			
Course	Semester	Credits	Grade

<b>MATH Requirem (6-8 credits)</b>			
Course	Semester	Credits	Grade
*MTH 131		3	

**OR**

*MTH 141 <i>Preferred</i>		4	
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**AND 1 OF THE FOLLOWING:** MTH \*111, 132, \*142;  
\*CSC 201; STA 307, 308, or 409

Course	Semester	Credits	Grade

<b>PHYSICS Requirement: (8 credits)</b>			
Course	Semester	Credits	Grade

*PHY 111		3	
*PHY 185		1	

**OR**

*PHY 203 <i>Preferred</i>		3	
*PHY 273 <i>Preferred</i>		1	

**AND**

Course	Semester	Credits	Grade
*PHY 112		3	
*PHY 186		1	

**OR**

*PHY 204 <i>Preferred</i>		3	
*PHY 274 <i>Preferred</i>		1	

\*Course fulfills general education and a major requirement

**Cell & Molecular Biology - B.S.**  
**Microbiology Option**  
120 Total Earned Credits

**THE UNIVERSITY OF RHODE ISLAND**

Student: \_\_\_\_\_  
Student ID: \_\_\_\_\_  
Advisor: \_\_\_\_\_

**General Education Guidelines:**

**General education is 40 credits. Each of the twelve outcomes (A1-D1) must be met by at least 3 credits. A single course may meet more than one outcome, but cannot be double counted towards the 40 credit total. At least one course must be a Grand Challenge (G). No more than twelve credits can have the same course code. General education courses may also be used to meet requirements of the major or minor when appropriate.**

**LIST COURSES THAT MEET GENERAL EDUCATION:**

General Education Credit Count					
At least 40 credits, no more than 12 credits with the same course code					
Course	Credits	Grade	Course	Credits	Grade
*BIO 101	3				
*BIO 103	1				
*BIO 102	3				
*BIO 104	1				
*CHM 101	3				
*MTH ____					
*PHY ____	3				
*PHY ____	1				
*PHY ____	3				
*PHY ____	1				
*CMB 211	4				
			Total Credits		

**NOTE: BECAUSE MOST COURSES MEET MORE THAN ONE OUTCOME, YOUR OUTCOME AUDIT MIGHT BE COMPLETED BEFORE YOU REACH YOUR 40 CREDITS. HOWEVER, YOU MUST STILL COMPLETE 40 CREDITS OF GENERAL EDUCATION**

**\*course fulfills general education and a major requirement**

**LIST COURSE AS EACH OUTCOME IS MET:**

General Education Outcome Audit		
	Course	Grade
<b>KNOWLEDGE</b>		
<b>A1. STEM</b>	BIO 101	
<b>A2. Social &amp; Behavioral Sciences</b>		
<b>A3. Humanities</b>		
<b>A4. Arts &amp; Design</b>		
<b>COMPETENCIES</b>		
<b>B1. Write effectively</b>		
<b>B2. Communicate effectively</b>		
<b>B3. Mathematical, statistical, or computational strategies</b>	MTH ____	
<b>B4. Information literacy</b>		
<b>RESPONSIBILITIES</b>		
<b>C1. Civic knowledge &amp; responsibilities</b>		
<b>C2. Global responsibilities</b>		
<b>C3. Diversity &amp; Inclusion</b>		
<b>INTEGRATE &amp; APPLY</b>		
<b>D1. Ability to synthesize</b>	CMB 211	
<b>GRAND CHALLENGE</b>		
<b>G. At least one course of your 40 credits is an approved "G" course</b>		

**The requirement for transfer to CELS from University College for Academic Success is:**  
Minimum 30 credits and a minimum cumulative GPA of 2.0 or better.

**Advising Notes:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**B.S. Cell & Molecular Biology-Microbiology  
Option Sample 4 Year Plan - Effective Fall 2021  
College of the Environment & Life Sciences**

**Freshman Year *Fall* Semester**

Course Code	Description	Cr
URI 101	Planning for Academic Success	1
*BIO 101/103	Principles of Biology I/Lab	4
*MTH ____	Precalculus, Applied Calculus I, or Introductory Calculus	3-4
*CHM 101/102	General Chemistry I/Lab	4
	*General Education	3-4
		<b>15-17</b>

**Freshman Year *Spring* Semester**

Course Code	Description	Cr
*BIO 102/104	Principles of Biology II/Lab	4
*CHM 112/114	General Chemistry II/Lab	4
	2nd required CSC, MTH, or STA course	3-4
	*General Education	3-4
	*General Education	3-4
		<b>15-17</b>

**Year 1 Milestones:** Complete **BIO** 101, 103, 102, 104, **CHM** 101, 102, 112, 114, **MTH** 131 or 141. Earn 30 credits with a cumulative GPA of 2.0 or higher.

**Sophomore Year *Fall* Semester**

Course Code	Description	Cr
CHM 227	Organic Chemistry Lecture I	3
*CMB 211	Integrative Microbiology	4
*PHY ____	General Physics I Lecture/Lab	4
	*General Education	3-4
	*General Education	3-4
		<b>15-17</b>

**Sophomore Year *Spring* Semester**

Course Code	Description	Cr
CHM 228	Organic Chemistry Lecture II	3
CMB 311	Introductory Biochemistry Lecture	3
*PHY ____	General Physics II Lecture/Lab	4
	Professional Elective	3
	*General Education	3-4
		<b>15-17</b>

**Year 2 Milestones:** Complete **CMB** 211, and 311. Begin Organic Chemistry sequence. Begin Physics sequence. Meet with a CMB Faculty advisor to discuss research opportunities and plan year 3 and 4 courses. Earn 60 total credits with a cumulative GPA of 2.0 or higher.

**Junior Year *Fall* Semester**

Course Code	Description	Cr
CHM 226	Organic Chemistry Lab	2
CMB 333	Immunology and Serology	3
	Professional Elective	3-4
	Professional Elective	3-4
	*General Education/Free Elective	3-4
		<b>15-17</b>

**Junior Year *Spring* Semester**

Course Code	Description	Cr
CMB 352	General Genetics	4
	Professional Elective	3-4
	Professional Elective	3-4
	*General Education/Free Elective	3-4
	*General Education/Free Elective	3-4
		<b>15-17</b>

**Year 3 Milestones:** Complete **CMB** 333, & 352. Complete Organic Chemistry sequence. Meet with a CMB Faculty advisor to plan year 3 and 4 courses. Earn 90 total credits with a cumulative GPA of 2.0 or higher. Prepare intent to graduate with faculty advisor for Fall submission.

**Senior Year *Fall* Semester**

Course Code	Description	Cr
CMB 495	Seminar in Cell & Molecular Biology	1
CMB 413	Advanced Microbiology Lecture I	3
CMB 414	Advanced Microbiology Laboratory I	2
	*General Education/Free Elective	
	*General Education/Free Elective	
		<b>15-17</b>

**Senior Year *Spring* Semester**

Course Code	Description	Cr
CMB 415	Advanced Microbiology Lecture II	3
CMB 416	Advanced Microbiology Laboratory II	2
	*General Education/Free Elective	3-4
	*General Education/Free Elective	3-4
	Professional Elective	3-4
		<b>15-17</b>

**Year 4 Milestones:** Complete **CMB** remaining microbiology concentration courses. Earn total 120 credits with a cumulative GPA of 2.0 or higher. Minimum 2.0 cumulative gpa in CMB concentration courses.